



DT02 Rec'd PCT/PTO 31 JAN 2005

PATENT  
1254-0258PUS1

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: KAKU, Koichiro et al. Conf.: Unassigned  
Appl. No.: 10/507,132 Group: Unassigned  
Filed: September 10, 2004 Examiner: Unassigned  
For: GENE CODING FOR SCYTALONE DEHYDRATASE  
EXHIBITING RESISTANCE TO AGRICULTURAL  
FUGICIDAL AGENT

L E T T E R

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

JAN 31 2005

Sir:

Subsequent to the filing of the above-identified application on September 10, 2004, attached hereto is an English translation of the International Preliminary Examination Report (IPER 409) that should be made of record in the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By Kusti & Rupert #45, 702  
for Gerald M. Murphy, Jr., #28,977

GMM/KLR:kdm  
1254-0258PUS1

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Attachment(s)

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT  
(PCT Rule 72.2)

To:

HIRAKI, Yusuke  
Toranomon No. 5 Mori Building Third Floor  
17-1, Toranomon 1-chome  
Minato-ku, Tokyo 105-0001  
JAPON

Date of mailing ( <i>day/month/year</i> ) 02 December 2004 (02.12.2004)	
Applicant's or agent's file reference PH-1735-PCT	IMPORTANT NOTIFICATION
International application No. PCT/JP2003/001980	International filing date ( <i>day/month/year</i> ) 24 February 2003 (24.02.2003)
Applicant KUMIAI CHEMICAL INDUSTRY CO., LTD. et al	

**1. Transmittal of the translation to the applicant.**

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

**2. Transmittal of the copy of the translation to the elected Offices.**

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

CN, KR

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

JP, US

**3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).**

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.



The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.+41 22 740 14 35	Authorized officer  Masashi Honda  Facsimile No.+41 22 338 70 10
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Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

PCT Application  
PCT/JP2003/001



Applicant's or agent's file reference PH-1735-PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP03/01980	International filing date (day/month/year) 24 February 2003 (24.02.03)	Priority date (day/month/year) 12 March 2002 (12.03.02)
International Patent Classification (IPC) or national classification and IPC C12N 15/31, 15/60, C07K 14/47, C12N 1/15, 1/19, 1/21, 5/10, C12Q 1/48		
Applicant KUMIAI CHEMICAL INDUSTRY CO., LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.  
☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 07 May 2003 (07.05.03)	Date of completion of this report 27 May 2003 (27.05.2003)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP03/01980

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☒ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☒ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/JP 03/01980

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-11	YES
	Claims		NO
Inventive step (IS)	Claims	1-11	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-11	YES
	Claims		NO

## 2. Citations and explanations

Document 1: T. MOTOYAMA et al., "cDNA Cloning, Expression, and Mutagenesis of Scytalone Dehydratase Needed for Pathogenicity of the Rice Blast Fungus, *Pyricularia Oryzae*," Biosci. Biotechnol. Biochem., 1998, Vol. 62, No. 3, pages 564-566

Document 2: M. NAKASAKO et al., "Cryogenic X-ray Crystal Structure Analysis for the Complex of Scytalone Dehydratase of a Rice Blast Fungus and its Tight-Binding Inhibitor, Carpropamid: The Structural Basis of Tight-Binding Inhibition," Biochemistry 1998, Vol. 37, pages 9931-9939

Document 1 indicates that scytalone dehydratase from the rice blast fungus was isolated and purified, and that the gene that codes the scytalone dehydratase was cloned.

Document 2 indicates that a complex of the abovementioned scytalone dehydratase and carpropamid, which is a scytalone dehydratase inhibitor, was subjected to an X-ray structure analysis, and the results of the analysis show that a plurality of residue groups interact with the carpropamid, thereby tightly binding the scytalone dehydratase and the carpropamid. Specifically,

document 2 presents the Val-75 group as one of the residue groups involved in the interaction, and indicates that the angle of the primary chain in the Val-75 group is abnormally bent as a result of the bond with the carpropamid (refer to page 9935, right column and fig. 3).

However, document 1 and document 2 do not indicate or suggest that substituting the Val-75 group with methionine would negate the inhibiting action of carpropamid. Furthermore, document 1 and document 2 do not indicate or suggest that the rice blast fungus can be made to exhibit carpropamid resistance by substituting the Val-75 group in said scytalone dehydratase with methionine.

Therefore, the inventions set forth in claims 1-11 of this application are novel, involve an inventive step and have industrial applicability.